

1. (Currently amended) Apparatus for sensing spark in an igniter in a gas turbine engine, comprising:

- a) a holder into which the igniter is inserted;
- b) a coil mounted in the holder; and
- ~~b)~~ c) a detector for detecting current in the coil.

2. (Original) Apparatus according to claim ~~33~~ 1, wherein said holder reaches a temperature of 175 F or greater during normal operation of the engine.

3. (Original) Apparatus according to claim 1, wherein the coil is in thermal contact with the igniter.

4. (Original) Apparatus according to claim 1, wherein said holder is conductive and held at a system ground.

5. (Original) Apparatus according to claim 2, wherein no electrical current passing through the igniter enters the coil.

6. (Currently amended) ~~Apparatus according to claim 1,~~
Apparatus for sensing spark in an igniter in a gas turbine engine,
comprising:

- a) a holder into which the igniter is inserted;
- b) a coil mounted in the holder; and
- c) a detector for detecting current in the coil,

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wherein (1) a cable runs from an exciter to the igniter, (2) the cable delivers electrical power to the igniter, (3) an external conductive shield surrounds the cable and is connected to the engine, and (4) the cable connects to the igniter at a contact point, and a second conductive shield extends from the contact point along the igniter, and wherein

d) the coil is wholly external to both conductive shields.

7. (Original) Apparatus according to claim 1, wherein part of the igniter forms a core of the coil.

8. (Original) Apparatus according to claim 6, wherein the second conductive shield comprises a housing of the igniter.

9. (Original) Apparatus for attaching an igniter to a gas turbine engine, comprising:

- a) a base containing a threaded bore, into which bore the igniter can be threaded;
- b) holes in the base through which fasteners can fasten the base to the engine; and
- c) a coil affixed to the base, for detecting currents in the igniter.

10. (Original) Apparatus for attachment to an igniter for

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a gas turbine engine, the igniter having (1) a proximal end, (2) a casing at the proximal end, the casing having a cross sectional shape S, and (3) an electrical connector at the proximal end, the apparatus comprising:

- a) a housing having an internal aperture matching shape S, so that the housing fits about the proximal end;
- b) within the housing,
 - i) an inductive pick-up, and
 - ii) an amplifier which amplifies signals produced by the pick-up.

11. (Original) Apparatus according to claim 10, wherein the inductive pick-up is in thermal contact with the casing, when the housing is fitted about the proximal end.

12. (Original) Apparatus according to claim 10, wherein the amplifier comprises an RLC amplifying circuit.

13. (Original) Apparatus according to claim 12, wherein the igniter is powered by non-sinusoidal voltage pulses of frequency F, with each pulse having a duration D, and the RLC resonant circuit is resonant to sinusoidal steady-state excitation of a frequency $1/2D$.

14. (Original) Apparatus according to claim 13, wherein the

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non-sinusoidal voltage pulses are substantially triangular.

15. (Currently amended) ~~Apparatus according to claim 13, and further comprising~~

Apparatus for attachment to an igniter for a gas turbine engine, the igniter having (1) a proximal end, (2) a casing at the proximal end, the casing having a cross sectional shape S, and (3) an electrical connector at the proximal end, the apparatus comprising:

a) a housing having an internal aperture matching shape S, so that the housing fits about the proximal end;

b) within the housing,

i) an inductive pick-up, and

ii) an amplifier comprising an RLC circuit which amplifies signals produced by the pick-up;

d) a ring of high permeability material which surrounds the igniter when the housing is fitted to the igniter, and a magnetic field produced by current passing through the connector travels through both the high permeability material and the inductive pick-up

wherein the igniter is powered by non-sinusoidal voltage pulses of frequency F, with each pulse having a duration D, and the RLC resonant circuit is resonant to sinusoidal steady-state excitation of a frequency $1/2D$.

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16. (Original) Apparatus, comprising:

- a) an igniter for a gas turbine engine;
- b) an inductive pick-up adjacent the igniter; and
- c) an amplifier having no active elements, which amplifies signals produced by the pick-up.

17. (Original) Apparatus according to claim 16, wherein the pick-up produces signals when the igniter produces sparks.

18. (Original) Apparatus according to claim 16, wherein the amplifier comprises an RLC resonant circuit.

19. (Original) Apparatus according to claim 18, wherein the igniter is powered by non-sinusoidal voltage pulses of frequency F , with each pulse having a duration D , and the RLC resonant circuit is resonant to sinusoidal steady-state excitation of a frequency $1/2D$.

20. (Original) Apparatus according to claim 16, wherein the amplifier contains no active elements.